

**REMARKS**

Claims 1, 2 and 5-15 are pending in this application. By this Amendment, claims 3 and 4 are canceled without prejudice to or disclaimer of the subject matter recited therein. Claims 1, 5-7 and 15 are amended. Claim 1 is amended to incorporate the subject matter of canceled claims 3 and 4. Claims 5-7 and 15 are amended to correct minor formalities. Thus, no new matter is added.

**I. Petition Under 37 C.F.R. §1.84**

A Petition for Acceptance of Color Drawings and Photographs under 37 C.F.R. §1.84(a)(b) was filed in the U.S. Patent and Trademark Office on October 2, 2002. A Preliminary Amendment was filed with the Petition requesting that prior to initial examination, the specification be amended to include additional paragraph [0017] to recite "The application filed for this application contains at least one drawing and/or photograph executed in color. Copies of this Patent application publication with color drawings and photographs will be provided by the Office upon request and payment of the necessary fee." A copy of the Petition, Preliminary Amendment, and date stamped filing receipt is attached hereto.

On April 30, 2003, Applicants received a communication from the Patent and Trademark Office denying the Petition stating that the amendment to the specification was not included attached to the Petition as stated. As Applicant has provided date stamped evidence of submission and receipt of the amendment, Applicants request the Petition under 37 C.F.R. §1.84 be entered and granted.

Applicants appreciate the acknowledgement from Examiner Bertoglio on April 12, 2004 of receipt and possession of the color photographs submitted with the October 2, 2002 filing.

**II. Election/Restriction**

Applicants appreciate the indication of generic subject matter recited in claims 8, 9, 10 and 15. Applicants submit that, as indicated in the Response to Election of Species Requirement filed on November 5, 2003, that at least claims 1-9 and 11-15 also read on the Elected Species. As all of pending claims 2 and 5-15 depend from independent claim 1, Applicants submit that claim 1 is by definition generic to the Elected Species.

Applicants request that upon allowance of any generic claim that all claims embraced by the allowable generic claim be allowed.

**III. Claim Objections**

Claim 7 is objected to for containing a spelling error. As the error is corrected Applicants request the rejection of claim 7 be withdrawn.

Claims 9, 10 and 15 are objected to as being drawn to non-elected subject matter. As no claims stand withdrawn, Applicants request the objection of claims 9, 10 and 15 be withdrawn. Applicants further request that upon allowance of any generic claim that generic claims 9, 10 and 15 also be allowed.

**IV. Claim Rejections Under 35 U.S.C. §112, First Paragraph**

Claims 1-15 are rejected under 35 U.S.C. §112, first paragraph. The rejection is respectfully traversed.

The Office Action alleges that the specification does not enable a method for processing a cell comprising irradiating a cell with a laser beam through an optical fiber and removing or boring a hole in a cell wall and does not reasonably provide enablement for irradiating a cell with a laser beam through an optical fiber and removing or boring a hole in a cell membrane or an entirety of a cell. The Office Action goes on to state that the specification teaches uses a quartz fiber optical fiber guide to deliver a laser to the cell wall of a plant cell, transmitting a 193 nm ArF excimer laser beam through a quartz fiber and a quartz

capillary coated with aluminum and irradiating an onion skin epidermic cell with the laser, removing the cell wall. The specification then states that after this procedure, the cell was still alive after 24 hours. Thus, as clearly stated in the Office Action the specification does provide support for irradiating a cell with a laser beam through an optical fiber and removing or boring a hole in a cell wall, or a cell membrane, or an entirety of the cell. In addition to the example provided in the Office Action, numerous other examples are provided in the specification, of enabling the subject matter recited in the claims.

The Office Action also alleges that the specification does not teach that fluorescence actually occurred when a plasmid encoding GFP (green fluorescent protein) was injected into a hole in the plant cell. However, as actual fluorescence is not claimed in any of the claims, the rejection to the specification on these grounds is moot.

The Office Action further rejects the specification for not enabling boring a hole into a cell wherein the hole is large enough for a nucleus to be introduced. However, at page 7 of the specification, paragraph [0032] the specification recites that no limitation is posed upon the size of the hole bored by the irradiation with the laser beam, which size depends upon that of a foreign matter to be introduced. The specification discloses, for example, the size of the hole is about 1 to 1,000  $\mu\text{m}^2$ . Applicants assert that such a hole would be large enough for a nucleus to be introduced. For example, an average human nucleus is approximately 10  $\mu\text{m}$ , which size falls within the range of 1 to 1,000  $\mu\text{m}$  recited in the application. Thus, the specification provides the guidance necessary for one skilled in the art to create a hole large enough to accommodate a nucleus.

The Office Action further alleges that the specification does not provide the guidance necessary for one of skill in the art to use a laser on a cell to selectively introduce a pore large enough to accommodate a plant or animal cell nucleus and not kill or harm the cell.

However, as not killing or harming the cell is not recited in the claims, the objection to the specification enabling such is moot.

Additionally, as stated at page 4 of the Office Action, the specification does disclose that an onion skin epidermic cell which was irradiated with a laser, removing the cell wall, was still alive after 24 hours. Accordingly, non-lethal manipulation is disclosed.

Finally, Applicants submit that one skilled in the art would readily understand and know that a cell could be maintained in a live condition, i.e., non-lethal manipulation, by those processes currently known. For example, one skilled in the art would understand that a pulse laser beam may be used with beam expander to create an XY slit on a light path and micro projection may be carried out to the surface of the cell using a projection lens, thus creating a "large" hole depending on the scale factor of the lens. Thus, maintaining cell viability through non-lethal manipulation is known.

**V. Claim Rejections Under 35 U.S.C. §112, Second Paragraph**

Claims 1-15 are also rejected under 35 U.S.C. §112, second paragraph. The rejection is respectfully traversed.

The Office Action alleges that claim 1 is unclear for the use of "and/or". As claim 1 is amended in reply to the rejection, Applicants request the rejection of claim 1 and dependent claims 2-15, be withdrawn.

Claim 6 is alleged to be unclear for containing an improper Markush Group. Claim 6 is amended in reply to the rejection.

Claim 15 is alleged to be unclear for referring to a "transformed body". As claim 15 is also amended in reply to the rejection, Applicants request the rejection of the claims under 35 U.S.C. §112, second paragraph, be withdrawn.

**VI. Claim Rejections Under 35 U.S.C. §102**

Claims 1 and 7 are rejected under 35 U.S.C. §102(b) as anticipated by Silkiss (1993, Ophthalmic Surgery, Vol. 24, pages 772-774). The rejection is respectfully traversed.

As claim 1 is amended to include the subject matter recited in canceled claims 3 and 4, Applicants assert that Silkiss does not disclose each and every feature recited in the rejected claims. Accordingly, Applicants respectfully request the rejection of claims 1 and 7 under 35 U.S.C. §102(b) be withdrawn.

Claims 1-3 and 7 are rejected under 35 U.S.C. §102(b) as anticipated by Henriksen (1997, Eur J Physiol., Vol. 443, pages 832-841). The rejection is respectfully traversed.

Applicants assert that as claim 1 is amended to include the subject matter recited in claims 3 and 4, that Henriksen does not disclose all of the features recited in the claims as amended. For example, Henriksen does not disclose, nor is alleged to disclose, a method for processing a cell comprising *inter alia* irradiating a cell, wherein the cell is irradiated with the laser through reflection and condensing which are effected through a chip of quartz glass. Thus, Applicants respectfully request the rejection of claims 1-3 and 7 under 35 U.S.C. §102(b) be withdrawn.

Claims 1, 2 and 7 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,586,982 to Abela. The rejection is respectfully traversed.

Applicants assert that Abela does not disclose each and every feature recited in amended claim 1. For example, because claim 1 is amended to incorporate the subject matter recited in claims 3 and 4, Abela does not disclose, nor is alleged to disclose, the subject matter recited in the amended claim. Accordingly, Applicants respectfully request the rejection of claims 1, 2 and 7 under 35 U.S.C. §102(b) be withdrawn.

Claim 15 is rejected under 35 U.S.C. §102(b) as anticipated by Kwon (1997, Oncogene, Vol. 15, pages 2625-2631). The rejection is respectfully traversed.

The Office Action alleges that Kwon discloses all of the features recited in claim 15. However, as claim 15 is dependent upon claim 10 (which depends from claim 9, which in turn depends from claim 8, which in turn depends from claim 1), that Kwon does not disclose all of the features recited in claim 15. Because claim 15 incorporates the subject matter recited in each of claims 1, 8, 9, 10 and 15, the Office Action fails to provide support for the allegation that Kwon discloses each and every feature recited in claim 15. Accordingly, Applicants submit that Kwon does not disclose each and every feature recited in claim 15. For example, Kwon does not disclose the subject matter recited in cancelled claims 3 and 4, that is incorporated into claim 1. Thus, Applicants respectfully request the rejection of claim 15 under 35 U.S.C. §102(b) be withdrawn.

**VII. Claim Rejections Under 35 U.S.C. §103**

Claims 1 and 11 are rejected under 35 U.S.C. §103(a) as unpatentable over Abela in view of U.S. Patent No. 5,951,543 to Brauer and U.S. Patent No. 5,951,543 to Harrington. The rejection is respectfully traversed.

Applicants assert that none of the applied references, whether considered alone or in combination, disclose or suggest each and every feature recited in amended claims 1 and 11. For example, the combination of references does not disclose or suggest a method for processing a cell, comprising *inter alia* the steps of irradiating a cell or a living tissue with a laser beam through an optical fiber, and cutting off, removing or boring a cell wall or a cell membrane or an entirety of a cell thus irradiated wherein the cell is irradiated with the laser through reflection and condensing which are affected through a chip of quartz glass.

The Office Action alleges that Abela discloses applying laser energy to a cell transmitted through a fiber optic waveguide. The Office Action then admits that Abela does not disclose the use of a hollow quartz fiber used as a fiber optic waveguide. To overcome the admitted deficiency, the Office Action combines Brauer for allegedly disclosing a

flexible, hollow waveguide to introduce a laser in vivo because the hollow waveguide offers greater flexibility for in vivo manipulation. The Office Action further combines Harrington for allegedly disclosing making a flexible hollow waveguide for transmitted laser radiation with low attenuation.

Applicants submit that even were such a combination made, the resulting combination would not render obvious the subject matter recited in amended claims 1 and 11. For example, the combination would not disclose or suggest a method for processing a cell ... wherein the cell is irradiated with the laser through reflection and condensing which are affected through a chip of quartz glass, as recited in amended claim 1. Furthermore, combination would not disclose or suggest the additional feature recited in rejected claim 11.

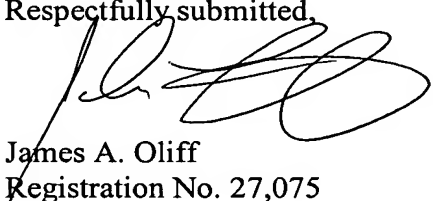
Applicants note that none of claims 4, 5, 6, 8-10 or 12-14 are substantively rejected. Rather, these claims are rejected only under 35 U.S.C. §112, which rejections are addressed above. Accordingly, Applicants assert that the subject matter in claims 4, 5, 6, 8-10 and 12-14, as well as in the remaining pending claims, is allowable.

#### **VIII. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2 and 5-15 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:JWF/ldg

Attachments:

Petition for Acceptance of Color Drawings  
and Photographs under 37 C.F.R. §1.84(a)(b)  
Preliminary Amendment  
PTO Date-stamped Filing Receipt

Date: April 12, 2004

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